75 Years of Service
NRECA
America's Electric Cooperatives

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March 9, 2018

Federal Emergency Management Agency
500 C Street S.W.
Washington, DC 20472

RE: FEMA's draft National Mitigation Investment Strategy

I. Introduction and Background

The National Rural Electric Cooperative Association ("NRECA") appreciates the opportunity to submit comments on the above captioned item. In addition, NRECA believes it would be in the best interest of our members to schedule an in-person meeting with FEMA's Mitigation Framework Leadership Group ("MitFLG) to further discuss our comments on MitFLG's draft strategy.

The National Rural Electric Cooperative Association is the national service organization for more than 900 not-for-profit rural electric utilities that provide electric energy to over 42 million people in 47 states. NRECA membership is composed of 838 distribution cooperatives and 65 generation and transmission ("G&T") cooperatives. Both distribution and G&T cooperatives were formed to provide reliable electric service to their member-owners at the lowest reasonable cost.

Every year, NRECA's member cooperatives spend billions of dollars to maintain, repair, harden, upgrade and generally improve system resiliency. NRECA members do so not only to reduce the number of outages in future storms and to provide the most reliable electric service possible, but also because in many cases, such maintenance and upgrades may be required by those that lend capital to electric cooperatives – e.g. USDA's Rural Utilities Service, the National Rural Utilities Cooperative Finance Corporation and CoBank. In addition, some states strongly encourage and may require electric utilities to harden and underground their facilities to protect customers from prolonged outages.

The nation's not-for-profit electric cooperatives are self-governed – the Board of Directors is elected by and from the membership on a regular basis. This type of robust, democratically based governance provides incentives for electric cooperatives to do their best to provide reliable service, including pursuing mitigation projects. Cooperative management is dedicated to this mission and knows that cooperative member-owners can change the management and Board if they are dissatisfied

with performance. Lest FEMA think this is a theoretical discussion, consider the case of the electric cooperative whose membership was dissatisfied with the response of the cooperative leadership to a major storm event. The membership felt strongly that the resulting power outage was significantly longer than necessary. At the next election, none of the incumbent Board members up for re-election were re-elected and the CEO was replaced. Despite the fact that the cooperatives' response and recovery costs may be eligible for reimbursement through grants from the Federal Emergency Management Agency ("FEMA"), that reimbursement covers in many cases only 75% of the costs incurred due to a disaster. Thus, it may be more prudent for electric co-ops to upgrade sections of their systems to better withstand damage by natural disasters, rather than having to rebuild systems as part of recovery from natural disasters.

Because of the capital intensive nature of the electricity industry, electric cooperatives, which serve 364 of the nation's 395 persistent poverty counties[1] rely in part on FEMA mitigation funds to assist with, supplement and leverage but not supplant, the capital investments that electric cooperatives make in the interest of hardening systems and mitigating future storm damages.

Examples of the benefits the current FEMA mitigation program has delivered to electric cooperatives include:

- In Iowa, since 2008, more than $250,000,000 in federal and State of Iowa hazard mitigation funds have been secured in that state resulting in more than 5,000 miles of "hardened" electric lines being built by Iowa cooperatives.
- In 2013, Alfalfa Electric Cooperative, Cherokee, OK, experienced the worst ice storm in its history, losing over 700 poles. During that event, a 5 mile section of 3-phase line was heavily damaged. This feeder had originally been built with a 384' ruling span, #2 ACSR phases and #4 ACSR neutral. The mitigation project consisted of installing poles at all mid spans and re-conductor with 1/0 ACSR phases and #2 ACSR neutral. All cross-arm assemblies were also replaced. Since this project was completed this section of line has endured two major ice storms, the first being in November 2015 and the second in December 2015. The co-op experienced no trouble with this section of line in the 2015 ice storms. The total claim for this mitigation project was $173,000.
- A cooperative in Virginia applied for and received mitigation funds after the Derecho of 2012. Approximately 20 poles on a span just under a mile in length were leaning dramatically following the storm. Mitigation funds were used to strengthen the poles up to Class 2 to allow for mitigation of future wind exposure. In the most recent wind storm (March 2018), that hardened portion of the system was not damaged.

[1] Persistent poverty counties are defined by the U.S. Department of Agriculture's Economic Research Service as those counties where 20% or more of the population has lived in poverty for the last 30 years.

- Kiamichi Electric in Oklahoma received mitigation funds in 2008 from a 2007 ice storm in the amount of $132,230.70. These funds were used to harden Highway and Turnpike crossings as well as install storm guys/anchors. The highway and turnpike crossing were dead ended on both ends and the conductor size was increased to get more strength. Kiamichi has since experienced an ice storm (2009), two tornadoes (2011 and 2015), and straight line winds (2017). The mitigation project reduced the damage from the subsequent storms.
- Following a 2013 ice storm, Cimarron Electric Cooperative in Oklahoma implemented a mitigation project that was completed in December 2016. A subsequent ice event in January 2017 resulted in the electric cooperative losing only 129 poles. All the damage was limited to the areas that did not qualify for mitigation and the cooperative did not lose a single structure in the area of mitigation. Attached to these comments as Attachment 1 is a map showing the damaged area (red) in relation to the where the mitigated projects were (yellow). By comparison, a neighboring cooperative lost 6,000 poles in the January 2017 event.
- In Kansas one of the most widespread and significant ice storms to affect the state occurred in December of 2007 (FEMA DR-1741). Total Public Assistance grants allocated for this disaster were more than $225M with a significant portion going to electric cooperatives for the permanent repair of their storm-damaged facilities. Many of these repair projects involved replacement of small copper, copper-weld-copper and ACSR (#4) conductor that was installed on class 6 and class 7 poles with ruling spans in excess of 300 feet. This conductor was replaced with #2 ACSR which required a reduction in span lengths and increased pole strength to meet the current codes and standards. There have been a number of significant ice storms since the completion of these projects (including DR-4112, DR-4319 and DR-4304). These storms affected many of the same areas that were impacted by DR-1741 and the facilities repaired under DR-1741 have withstood these more recent events with very minimal or no damage. The electric cooperatives in Kansas recognize the value of these mitigation techniques (shorter spans and stronger poles, among others) and many of them have been implementing self-funded projects to eliminate or reduce the amount of small conductor on their systems. A big deterrent to these self-funded projects is the lack of load growth and electric rates in rural areas that are already higher than many of their urban counterparts. While we support the concept of a National Mitigation Investment Strategy, any recommendations or policy changes should recognize these barriers. Some Kansas electric cooperatives have received FEMA mitigation grants to harden their systems and reduce their vulnerability to future disasters. We believe these grants to be sound investments in that FEMA's own experience indicated a $4 dollar return for every $1 invested in mitigation.

Please note that the list above represents only a sample of information from electric cooperatives. We continue to gather data and examples which take some time to Collect. While the data is being collected NRECA would welcome the opportunity to meet with FEMA's Mitigation Framework Leadership Group to provide further data on electric cooperatives and share leading practices and lessons learned, as contemplated by Section III (Conclusion and Next Steps) of the draft plan.

II. Observations on Outcomes and Recommendations Contained in the Draft Strategy

In this section we provide comments and suggestions on the Recommendations contained in the Draft Strategy. Please note that we do not comment on every Outcome and Recommendation – we have limited our comments to the Outcomes and Recommendations that are directly related to our industry and our mitigation challenges.

Outcome 1: Coordination of risk mitigation and management improves between and among public, private, and non-profit sector entities.

Recommendation 1.1: Public, private, and non-profit sector entities should, in a coordinated manner, develop and use a shared understanding of mitigation-related terms.

NRECA Response:

We support the development of mitigation related terms and we would welcome the opportunity to participate with the MitFLG in developing a data base of mitigation related terms that can be used across the public, private and non-profit sectors. One of our concerns is that mitigation strategies that are appropriate for roads, hospitals and other buildings may not be applicable to electric utility infrastructure. Cross sector work on developing and using shared understanding of mitigation-related terms may help all sectors understand and respect these differences.

Recommendation 1.2: Public, private, and non-profit sector entities should, in a coordinated manner, develop and use common sets of metrics and indices for identifying and evaluating mitigation measures and overall resilience.

NRECA Response:

The implementation of this recommendation is likely to be a complex and time intensive exercise. Our work with other agencies in trying to develop standard metrics for resilience solely within the power sector has proven challenging. Nevertheless we would offer our time and expertise to participate in the discussion and development of a response to this recommendation.

Recommendation 1.3: Public sector entities at the federal and SLTT levels should adopt, to the extent possible, complementary timelines, criteria, and streamlined application processes for different types of mitigation, preparedness, and recovery funds.

NRECA Response:

We wholeheartedly support this recommendation. As FEMA/Stafford Act subgrantees, we work with both the federal and state governments in mitigation and recovery phases. Any opportunity to streamline processes, eliminate duplication and create appropriate structures to support creative responses to field issues should be examined.

A recent set of circumstances illustrates the need for streamlined processes. Howell – Oregon Electric Cooperative located in West Plains MO had five miles of single phase line destroyed by flooding that occurred in April of 2017. Howell-Oregon proposed to mitigate future damage by moving the line to higher ground. The State Emergency Management Agency checked with FEMA Regional authorities and was told that the cooperative could not change the location of the line unless the cooperative conducted and FEMA approved required environmental and archeological studies. Howell-Oregon had member-owners without power and needed to get the line back up in order to restore power. Howell-Oregon estimated that if the line was to be located in its original location, it would require 90 poles. If the line was rerouted to higher ground, the cooperative estimated that the new location would require 80 poles (or fewer). The cost of putting it back in the original location was estimated at $500,000. The cost of relocating it was estimated at approximately $495,000. Due to the need to get the lights back on and the inability to exercise flexibility and streamline mitigation, the line was rebuilt at its original location thus foregoing a mitigation opportunity.

Recommendation 1.5: Public, private, and non-profit sector entities should improve coordination between mitigation and other national preparedness mission areas, to allow community-based adaptations to strengthen all aspects of affected communities and mitigate future natural hazards during the recovery period.

NRECA Response:

As entities that have deep roots in their communities, electric cooperatives strongly support the concept of resilient communities. We support the recommendation that the federal government can provide leadership and coordination for this effort.

Outcome 2 – Private and non-profit sector entities increase their investments in and innovations related to resilience and mitigation.

Recommendation 2.1: Federal departments and agencies, and SLTTs, should remove barriers for, and otherwise support development of, financial products that reduce natural hazard risks and/or the costs of recovering from natural disasters.

NRECA Response:

Many of the cooperative assets that may be damaged during disasters are not insurable. While insurance was available in the past to replace poles, towers and conductors, the massive outlay of capital by the insurance industry after Florida hurricanes led the insurance markets to cease offering insurance for these assets. Electric cooperatives would be interested in exploring other financial products that would serve to reduce risk from natural disasters. Such products would have to safeguard the not-for-profit nature of electric cooperatives and not increase rates that electric cooperatives would charge their member-owners.

Recommendation 2.2: Public, private, and non-profit sector entities should encourage investments in developing and deploying new and improved tools and technologies related to mitigation.

NRECA Response:

Electric cooperatives have invested heavily in technology that supports mitigation. Examples include:

- Research and pilot projects involving microgrids that may limit the area of damage,
- Research and development in automatic switching schemes- also known as FLISR (Fault Location, Isolation, & Service Restoration) to minimize cascading impacts of power outages,
- Use of alternative materials such as steel, prestressed concrete, or composite materials poles in lieu of wood to provide stronger and more resilient infrastructure,
- Research and field testing of fiberglass crossarms instead of wood to provide more strength and resistance to wind and other types of damage,
- Testing of polymer and composite-type insulators instead of porcelain and glass insulators in order to increase insulator resiliency in storms, salt spray areas, extreme weather conditions. Further to reduce cracking, breaking and the risk of arc-tracking across insulator strings, and to reduce galloping and conductor motion on high voltage transmission lines and increase resistance to shocks from flying debris,

- Testing of ACSR\TW (trapezoidal) conductors as a replacement for traditional ACSR & AAAC. The trapezoidal conductors are more compact and therefore can withstand more wind and ice load.

Recommendation 2.3: Public, private, and non-profit sector entities (in public private partnerships, where feasible) should identify, evaluate, pilot, and promote non-traditional models for financing mitigation activities that promote leading practices and provide additional benefits to the funding resources.

NRECA Response:

We strongly suggest that this recommendation and recommendation 2.1 be combined – the goals and tools are essentially the same.

Outcome 3 – SLTTs increasingly empowered to lead risk reduction activities and share responsibility and accountability with the federal government.

Recommendation 3.3: Public, private, and non-profit sector entities should align financial incentives and cost sharing for mitigation projects.

NRECA Response:

We support this recommendation – it articulates the goals of the mitigation program today and we support more coordination between programs that exist at many levels. Coordination should have the goal of reducing administrative burdens on those entities that are pursuing mitigation projects in the interest of recognizing future conditions and improving ultimate resilience of infrastructure.

Outcome 4 – Public, private and non-profit sector entities develop and share more of the data and tools needed to make risk-informed mitigation investments.

Recommendation 4.2: Public, private, and non-profit sector entities should bolster existing efforts to disseminate leading practices, including an inventory of programs and case studies demonstrating the value of, and "business case" for, mitigation investments.

NRECA Response:

As we state in an earlier portion of these comments, NRECA and its member electric cooperatives would welcome the opportunity to provide the MitFLG additional case studies on the value of mitigation projects for electric systems. We would propose meeting with MitFLG as it continues with its work on the strategy.

Outcome 6 - The built environment — whether grey or nature-based infrastructure, and including lifeline infrastructure, buildings and homes — becomes more resilient and promotes community resilience.

Recommendation 6.4: The public and private sectors should encourage local and regional investment that enhance the security and resilience of infrastructure by supporting resilient design standards, and the planning and implementation of cross-jurisdictional and cross-sector capital improvement and other plans that address multiple and evolving human, technological, and natural threats and hazards.

NRECA Response:

NRECA members work with design standards promulgated by the U.S. Department of Agriculture's Rural Utilities Service ("RUS"), which are codified in the Code of Federal Regulations ("CFR").

There are several citations in the CFR that require RUS electric system borrowers – whether distribution systems, transmission systems, or electric generation systems – to follow specific engineering, architectural, and design standards. Some of the more common standards from the RUS are found in the following CFR sections:

7 CFR 1724 *– "Electric Engineering, Architectural Services and Design Policies and Procedures" (current as of March 5, 2018) Subpart E: Electric System Design.*

7 CFR 1726 *– "Electric System Construction Policies and Procedures," Subpart B – Distribution Facilities; Subpart C – Substation and Transmission Facilities; and Subpart D – Generation Facilities.*

7 CFR 1728 *– "Electric Standards and Specifications for Materials and Construction," and* ***7 CFR 1728.20*** *– "Establishment of Standards and Specifications," shown below:*

§1728.20 Establishment of standards and specifications.

> ***(a) National and other standards.*** *RUS will utilize standards of national standardizing groups, such as the American National Standards Institute (ANSI), American Wood Preservers' Association (AWPA), the various national engineering societies and the National Electrical Safety Code (NESC), to the greatest extent practical. When there are no national standards or when RUS determines that the existing national standards are not adequate for rural electric systems, RUS will prepare standards for material and equipment to be used on systems of electric borrowers. RUS standards and specifications will be codified or listed in §1728.97, Incorporation by Reference of Electric Standards and Specifications. RUS will also prepare specifications for materials and equipment*

when it determines that such specifications will result in reduced costs, improved materials and equipment, or in the more effective use of engineering services.
(b) Deviations from Standards. *No member of the RUS staff will be permitted to authorize deviations from the standard specifications, or to establish or change the technical standards, or to authorize the use of items that have not received acceptance by the Technical Standards Committees, except as provided for under §1728.70, or by authorization and/or delegation of authority by the Administrator of RUS.*
(c) Category of Items. *Items appearing in the List of Materials are listed by categories of generic items which are used in RUS construction standards incorporated by reference in §1728.97. RUS will establish and define these categories and will establish all criteria for acceptability within these categories.*

7 CFR 1730 *– "Electric System Operations and Maintenance," Subpart B – Operations and Maintenance Requirements, and Subpart C – Interconnection of Distributed Resources.*

Clearly, the intent of these design standards, regulations and guidelines is to make rural electric distribution systems, transmission systems, substations, and generation systems (and their interconnections) as durable, reliable, and resilient as possible through continuous long-term planning and updating of facilities, which promotes both system integrity and community resilience.

NRECA also maintains and encourages participation in a Mutual Aid Response Network that involves hundreds of electric cooperatives nationwide that stand ready to prepare for, and respond to natural disasters or extreme weather hazards impacting other cooperatives, municipalities and in some cases, small investor-owned utilities. Thus, the electric cooperative Mutual Aid Response Network is cross-jurisdictional in times of exigent or emergency circumstances caused by natural threats and hazards.

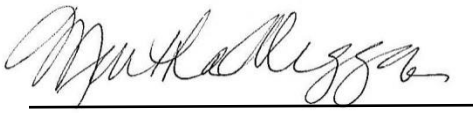
III. **Conclusion**

NRECA appreciates the opportunity to provide these comments. As the MitFLG continues to develop the strategy we hope that it will recognize the value of mitigation funds for electric cooperatives. While electric cooperatives are able to provide some self-funding for mitigation projects, as these comments indicate, we face (i) a lack of load growth in rural areas, (ii) rates for electric service that are already higher than many of our urban utility counterparts and (iii) service to areas and populations that are economically stressed. FEMA mitigation funds are an important part of our strategy to provide reliable, affordable safe electricity that supports resilient communities.

We also hope that FEMA and the MitFLG will consider the unique nature of each industry in the further development of the National Mitigation Investment Strategy. A strategy that works well for roads, bridges or buildings will not necessarily translate well to electric utility infrastructure. We strongly recommend the inclusion of stakeholder subject matter experts in the development and validation process for the strategy.

We stand ready to work with FEMA and the MitFLG to ensure that mitigation programs serve the interests of America's taxpayers and allow electric cooperatives and the communities we serve to increase resilience and decrease future damages from disasters.

Respectfully Submitted,



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Attachment 1
NRECA Comments
Draft National Mitigation Investment Strategy
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